

(Animal Product Series, No. 2.)

THE
AGRICULTURAL LEDGER

1897—No. I.

PEARLS AND PEARL FISHERIES,

(SEED PEARLS.)

[*DICTIONARY OF ECONOMIC PRODUCTS*, Vol. VI., Pt. I.,
P. 355-60.]

PEARL FISHING IN THE BASSEIN DISTRICT.

*Further Report by the Deputy Commissioner, furnished through the Revenue
Secretary to Government, Burma, together with correspondence relating
thereto.*

Consult Agricultural Ledger No. 36 of 1896.



CALCUTTA:
OFFICE OF THE SUPERINTENDENT, GOVERNMENT PRINTING, INDIA.
1897.

The objects of THE AGRICULTURAL LEDGER are :—

- (1) To provide information connected with agriculture or with economic products in a form which will admit of its ready transfer to ledgers ;
- (2) To secure the maintenance of uniform ledgers (on the plan of the Dictionary) in all offices concerned in agricultural subjects throughout India, so that references to ledger entries made in any report or publication may be readily utilised in all offices where ledgers are kept ;
- (3) To admit of the circulation, in convenient form, of information on any subject connected with agriculture or economic products to officials or other persons interested therein ;
- (4) To secure a connection between all papers of interest published on subjects relating to economic products and the official Dictionary of Economic Products. With this object the information published in these ledgers will uniformly be given under the name and number of the Dictionary article which they more especially amplify. When the subject dealt with has not been taken up in the Dictionary, the position it very possibly would occupy in future issues of that work will be assigned to it.

(Animal Product Series, No. 2.)

THE
AGRICULTURAL LEDGER.

1897—No. 1.

PEARLS AND PEARL FISHERIES.

(SEED PEARLS.)

[*Dictionary of Economic Products*, Vol. VI., Pt. I., P. 355-60.]

PEARL FISHING IN THE BASSEIN DISTRICT.

Further Report by the Deputy Commissioner, furnished through the Revenue Secretary to Government, Burma, together with correspondence relating thereto.

The following papers contain much additional interesting information on the subject dealt with in *The Agricultural Ledger* No. 36 of 1896. They are accordingly given as a supplement to that issue.

From the Revenue Secretary to the Chief Commissioner, Burma, to the Reporter on Economic Products to the Government of India,—No. 277-2F.—9, dated Rangoon, the 10th March 1897.

With reference to the correspondence ending with your letter No. 3112—191, dated the 7th October 1896, I am directed to forward, for your information, a copy, with five spare copies, of a Report by the Deputy Commissioner, Bassein, regarding the pearl fisheries in his district. The specimens referred to by the Deputy Commissioner are also forwarded by parcel post.

Register
No. 8980.
.. 8980a.
.. 8981.
.. 8982.

Endorsement by H. THOMPSON, Esq., Secretary to the Financial Commissioner, Burma,—No. 846-2F.—21, dated the 24th February 1897.

Copy of the following with the specimens referred to forwarded to the Revenue Secretary to the Chief Commissioner, Burma, with reference to his endorsement No. 594-2F.—16, dated the 28th October 1896.

P. 355-60.

PEARLS &
Pearl Fisheries.

Pearl Fishing in the

PEARL
FISHERIES.

Endorsement by H. THIRRELL WHITE, Esq., C.I.E., Commissioner of the Irrawaddy Division,—No. 139-4F.—8, dated the 6th February 1897.

Copy of the following, together with enclosures, submitted to the Financial Commissioner, Burma, for information with reference to his endorsement No. 249-2F.—59, dated the 7th November 1896.

From CAPTAIN F. D. MAXWELL, Deputy Commissioner, Bassein, to the Commissioner of the Irrawaddy Division,—No. 358, dated the 1st February 1897.

In continuation of the correspondence ending with your No. 5924-2F.—26, dated the 11th November, I have the honour to supply the following information concerning the pearl fisheries of this district—information which I have gleaned from men who have known these parts for many years and who have collected oysters for eating for a long time.

2. As regards the habits of the mussel, it lives on mud, sand, or on rocks. Beds appear and disappear either during or at the end of the rains—some say the former, some the latter. The more general opinion seems to be that they appear about November, when the water is getting salt. In the paper marked A I send some shells of the *Placuna* taken out of the river about 5 miles above its mouth on the 2nd January. The man who shewed me this bed informed me that the bed appeared last November. I pressed him as to whether the bed had not really appeared in the rains but that it was in November he knew of it for the first time. He would not allow, however, that the bed had appeared before November, and said that he was daily over the place during the monsoon and saw no signs of any oysters.

3. As to the appearance, disappearance, and breeding of the oyster none of the Burmans whom I examined could give me any information on the subject. An answer to the question is, however, to be found in Theobald, page 124: "The young are hatched within the body of the parent and are discharged in cloud-like swarms of tiny creatures to seek each its own living. The embryos at first swim freely about, in which stage they represent the permanent condition of the *Pteropoda*, but soon dropping their filamentous organs of motion as tadpoles do their tails, they either attach themselves permanently to any convenient roosting place within their reach as *Ostrea* or *Chama*, moor themselves securely by a *bysus* or cable, like *Pinna* or *Mytilus*, or lead a free and roving life like *Cardium* or *Unio*." See also *Dictionary of Economic Products*, Volume VI., page 121, where the following passage occurs: "The molluscs possess locomotive powers and frequently disappear from certain banks and migrate to more favourable situations." The Burmans say that no bed is known to be in existence for more than six years. During that time the action of the sea either covers them up with mud, thus smothering them, or breaks them away from their moorings, doing them mortal injury.

Register
No. 8981.

Bassein District.

PEARLS &
Pearl Fisheries.PEARL
FISHERIES.

4. The numbers to be found in one bed varies very much: sometimes many millions are found; at others only a few thousands. Sand appears to be the favourite bed, though mud is also appreciated. The oyster is also to be found on rocks, but not in such large numbers as on sand and on mud. This, the Burmans explained to me, because there is only a limited supply of rocky bottom, whereas the other two are practically unlimited in extent. I see, however, from *The Agricultural Ledger No. 36 of 1896* that the oyster prefers a muddy bottom—see page 5. The pearl is said to appear when the oyster is about three years old, that is to say, never before two years and never after four years. The pearls are very minute and require a microscope to see them, but a pair of sharp eyes can occasionally pick out the larger pearls. On enquiring why the pearls are so small, the villagers say that the pearl as it grows prevents the oyster from closing and so allows the mud and sand to get into the shell and thus to kill the oyster. You will observe from the shells sent that they are remarkably flat and that the smallest obstruction would prevent the oyster from closing. In many oysters that I examined I found three, four, and once as many as eight small pearls, and I am informed that sometimes as many as fifteen are found, but they are so infinitesimally small that it is extremely difficult to count them. When the larger pearls are found they are found usually singly.

5. The *modus operandi* of getting the pearls away from the flesh is as follows: The oysters having been collected are put into a large cauldron of hot water; they then open and keep open. The flesh is then scraped off the shell with a knife and thrown into a basin. When the basin is half full it is put in to the sun and the flesh allowed to decompose. After three or four days, when the flesh has more or less thoroughly decomposed, water is added and the whole mess stirred. The pearls being heavier than the decomposing and decomposed oyster fall to the bottom and are easily got out of the basin. The rest is then passed through a fine sieve, so that no pearl of even the smallest description shall escape. The only thing that appears to receive no consideration in the matter are the oysters. It is to be hoped that they do not long survive the hot bath; but on this point the villagers appear to be somewhat doubtful, saying that they have great tenacity of life and do not finally succumb until they have been in the basin some hours.

6. Oysters found on rocks, sand, and on mud produce very different quantities of pearls. I give the following figures for what they are worth—they were given me by men who had worked on all the different bottoms last year, so they ought to be fairly accurate and of some value: "Three thousand oysters found on rocky bottom produce R1 weight of pearls, 6,000 from a sandy bottom and 40,000 from a muddy bottom produce the same weight of pearls." My informants were unable to explain this great difference, and I am unable to offer any reasonable suggestion unless the following may be considered worth anything: At page 127 of *Theobald* it is stated that pearls are "merely a deposit of the lustrous lining material of the shell round some foreign and offending object."

PEARLS &
Pearl Fisheries.

Pearl Fishing in the

PEARL
FISHERIES.

This view is now apparently disputed, if not exploded. See the following from *Dictionary of Economic Products*, Volume VI., page 118:—

The popular notion that the foreign matter is generally a grain of sand is untenable. According to several eminent conchologists it is in most cases a minute parasite, but Dr. Kelaart believes the nucleus to be in most cases at least an ovum or ova escaped through the distended coats of an overgrown ovary and become imbedded in the interstices of the mantle. "I have repeatedly examined seeds or young pearl," he writes, "in process of formation, and with a magnifying power one-fifth of an inch lens I was able to see distinctly the outlines of two or three ova through the first or superficial layer of nacre surrounded by groups of ova." His theory is further supported by the fact that pearls are most frequently found imbedded in the mantle "near the hinge (the place where the ovarium is most likely to be liable to rupture) and by the fact that with careful examination he was generally able to find, when the pearls were not actually found in the interstices of the mantle near that locality, cicatrices on the structure where they once existed." The difference in the weight-producing capacity of the pearls found on different bottoms would seem to give colour to the popular belief that pearls are nothing more than "foreign and offending objects surrounded by the lustrous lining of the shell," but it is quite possible that the real explanation is something quite different.

7. The oysters were said in last year's report to be found in shallow water. This statement is, I find, only partially true. The oysters found last year were certainly found in shallow water, but I am informed that villagers have often found them in water at various depths—30 feet or more—so that if this is the case there seems no reason why they should not live in greater depths still.

8. I had about 300 oysters opened in my presence, and in each I found always one, sometimes two, small crabs. When only one it is the ordinary hard-coated grey type found on the sands; when there is a second it is to all appearance a different kind altogether, a blue shell and very soft. It is possible that these crabs live parasitically in the oysters—see Theobald, page 128. It is noticeable too, with regard to the remark made there, that it is to the presence of these small crabs that the unhealthiness of the mussel is attributed, that the Burmans regard the oyster as very unwholesome; but the reason they give is the presence of a minute worm found in nearly every shell. Even when this worm is extracted the Burman will not eat the oyster uncooked, though I swallowed several without feeling any ill-effects.

9. In paper marked B I enclose some shells exactly similar to those found in the river, but which are black inside. It may be

Bassein District.

PEARLS &
Pearl Fisheries.

thought that these are the same as those which are white inside, but I think not. The villagers say that the shells are washed up by the tide. I examined many hundreds of the shells taken last year by the lessee and did not find a single black shell among them. I also had six or seven men searching the heaps for a black shell but not one could be found. Perhaps the shell is a different variety of the *Placuna* and one found only out at sea and in deeper water than the white shells.

10. In *The Agricultural Ledger No. 36 of 1896*, page 5, an opinion of Doctor Alcock is quoted to the effect that the pearl fishery is not likely to interfere with the turtle banks, because the turtle prefer reefs and *Placuna* a muddy bottom. As to this I would remark that all along the mouth of the Thekithoung river, where *Placuna* are found in large numbers, the turtle known as *laitkwe* comes up to lay its eggs in the season from the month of September to that of December. If men were allowed to dive at night off the banks where the turtle come, I think there can be no doubt that the turtle would be scared away. It may be, and probably is, correct that turtle prefer reefs, but they do not by any means select the sands nearest the reefs to lay their eggs. If they did so they would not go up the Thekithoung river, but would remain out at sea and near Diamond Island. The turtle known as *laitpyintha* never come near the river but remain out at Diamond Island, whereas the number of *laitkwe* which lay there is very small. Out of 50 or 60 I saw on the island I only saw one *laitkwe*.

11. Regarding the remark of the same gentleman, that it is unwise to interfere with the poor people who collect *Placuna*, I think in future that in selling the right to collect oysters it should be stipulated that the villagers should be allowed to take what they want for their own consumption as the number they would take would be insignificant compared to the numbers taken by the lessee.

Probably 30,000 at most would supply the wants of the villagers.

12. In the paper enclosed and marked C I send some substance taken from the *osrea talienwahensis* from near Haingyi Island by a diver from 15 feet of water. The villagers call them pearls, but they do not answer to the description of what is generally understood by a pearl.

Perhaps the Reporter on Economic Products would say what paper marked C really contains.

13. Theobald states, page 127, that the true pearl oyster is found all along the Arakan Coast. The lessee of that part of the district recently went up the coast with a view to working these pearl fisheries, but I have not yet heard the result of this attempt.

14. I have not entered into the question as to whether the fisheries should be sold yearly as in the last two years, as I have not been asked to do so. I think, however, if the villagers are allowed to take what they want for their own consumption that the fisheries might be put up to auction as heretofore. If not sold, it is certain that they will be poached by Natives of India. There would hardly seem to be any necessity for insisting on a close season as the monsoon itself

PEARL
FISHERIES.
Register
No. 8982.

Register
No. 8990.
„ 8990a.

See next
page.

PEARLS &
Pearl Fisheries.

Pearl Fishing in the Bassein District.

PEARL
FISHERIES.

puts an end to all oyster collecting. Possibly the fisheries should only be sold for three years and then allowed to lie fallow for, say two years.

From the Reporter on Economic Products to the Government of India, to the Superintendent, Indian Museum, Calcutta,—No. 684—191, dated Calcutta, the 26th March 1897.

I have the honour to enclose a printed copy of letter No. 358, dated the 1st February 1897, from the Deputy Commissioner, Bassein, together with the specimens referred to therein as A, B, and C, and to request the favour of being furnished with your opinion on the subject as well as the names of the specimens forwarded.

From the Officiating Superintendent of the Indian Museum, to the Reporter on Economic Products to the Government of India,—No. 100, dated Calcutta, the 29th March 1897.

In reply to your letter No. 648—191, dated the 26th current, I have the honour to inform you that the shells referred to therein are *Placuna placenta*.

From the Reporter on Economic Products to the Government of India, to the Revenue Secretary to the Chief Commissioner, Burma, Rangoon,—No. 954—191, dated Calcutta, the 4th May 1897.

With reference to your letter No. 277-2 F.—9, dated the 10th March 1897, forwarding printed copies of a report by the Deputy Commissioner of Bassein regarding the pearl fisheries of that District, together with the specimens referred to therein, I beg to state that the specimens marked C were submitted to several of the principal precious stone dealers here who report as follows:—“The specimens are not pearls, but are formations of a bony nature found inside of oysters which are supposed to be the primitive stage of pearls. As they are, the specimens are of no value.” Those marked B are shells of the *Placuna placenta* also.

2. This additional information, it is contemplated, shall be published as a supplement of *The Agricultural Ledger* No. 36 of 1896.

Register
No. 8980.
“ 8980a.

Register
No. 8982.

All communications regarding THE AGRICULTURAL LEDGER should be addressed to the Editor, Dr. George Watt, Reporter on Economic Products to the Government of India, Calcutta.

The objects of this publication (as already stated) are to gradually develop and perfect our knowledge of Indian Agricultural and Economic questions. Contributions or corrections and additions will therefore be most welcome.

In order to preserve a necessary relation to the various Departments of Government, contributions will be classified and numbered under certain series. Thus, for example, papers on Veterinary subjects will be registered under the Veterinary Series; those on Forestry, in the Forest Series. Papers of more direct Agricultural or Industrial interest will be grouped according as the products dealt with belong to the Vegetable or Animal Kingdom. In a like manner, contributions on Mineral and Metallic subjects will be registered under the Mineral Series.

This sheet and the title-page may be removed when the subject-matter is filed in its proper place, according to the letter and number shown at the bottom of each page.